IISL COLLOQUIUM ON THE LAW OF OUTER SPACE (E7)
Balancing Needs: Protection of Space Science (3)

Author: Dr. James Benardini
NASA Headquarters, United States, James.N.Benardini@nasa.gov

Dr. Elaine Seasly
NASA Headquarters, United States, elaine.e.seasly@nasa.gov
Dr. J Andy Spry
SETI Institute, United States, aspry@seti.org

PLANETARY PROTECTION LUNAR POLICY: A CASE STUDY IN BALANCING COSPAR GUIDELINES, SCIENTIFIC CONSENSUS, NASA POLICY, AND MISSION IMPLEMENTATION

Abstract

With the increase of missions to the Earth's Moon over the next decade, NASA initiated an assessment and review of the policy and protection of Earth's Moon to enable scientific exploration. The assessment involved gathering scientific consensus regarding the Earth's Moon and proposed mission operations considering an understanding of the desired science needs for the Moon. This process involved seeking advice from the National Academies of Science, Engineering, and Medicine's (NASEM) Committee on Planetary Protection, engagement with the Committee on Space Research (COSPAR) Planetary Protection Panel (PPP), and consultation within NASA.

To begin this process, NASA issued a NASA Interim Directive (NID) 8715.128 entitled, "Planetary Protection Categorization for Robotic and Crewed Missions to the Earth's Moon" in July of 2019. This NID defined sensitive regions (e.g., permanently shadowed regions) on the Moon and required reporting on missions to these sensitive areas. Meanwhile, a NASEM study on the impact of human activities on lunar polar volatiles and the scientific value of protecting the surface and subsurface regions of the Earth's Moon from organic and biological contamination was initiated. This resulted in a NASEM report entitled, "Planetary Protection for the Study of Lunar Volatiles" which enabled further dialogue within NASA and with COSPAR. COSPAR PPP then leveraged this scientific consensus along with multi-agency input to develop an updated COSPAR Policy on Planetary Protection in June 2021 resulting in updated mission categorizations for Earth's Moon (existing Category II for orbiters, and new categories IIa and IIb for landed missions). NASA then updated its current planetary protection policy to apply directly to NASA and NASA partnered missions in NASA Procedural Requirements (NPR) 8715.24 entitled, "Planetary Protection Provisions for Robotic Extraterrestrial Missions". Along with the policy update NASA's Office of Planetary Protection has worked with mission and programmatic teams to streamline reporting requirements to a simplified checkbox and fill-in-the-blank type of template. Throughout the above-mentioned process, open and transparent communication between the policy makers and implementers was essential to ensure a balance with the updated policy, scientific intent, and practicality for each mission to be responsive and achieve mission success, including Artemis I and each of its secondary payloads, Gateway, CAPSTONE and Lunar Trailblazer.